



100 GROVE ST. | WORCESTER, MA 01605

December 14, 2021

Hopedale Planning Board
78 Hopedale Street
P.O. Box 7
Hopedale, MA 01747

T 508-856-0321

F 508-856-0357

gravesengineering.com

**Subject: 75 Plain Street
Site Plan Review**

Dear Planning Board Members:

We received the following documents in our office on November 2, 2021:

- Plans entitled Proposed Warehouse Building, 75 Plain Street, Hopedale, Massachusetts, Definitive Site Development Plans dated September 1, 2021, prepared by Highpoint Engineering, Inc. for 75 – 131 Plain Street, LLC. (45 of 47 sheets, Sheets C100 and C101 were missing)
- Bound document entitled Stormwater Management Analysis, Proposed Distribution Facility, 75 Plain Street, Hopedale, MA, dated September 1, 2021, prepared by Highpoint Engineering, Inc. for 75-131 Plain Street, LLC.
- Bound document entitled Traffic Impact and Access Study, Proposed Warehouse, Plain Street, Hopedale, MA, dated August 24, 2021, prepared by Bayside Engineering for 75-131 Plain Street, LLC.

We also received the following document in our office on December 1, 2021:

- Correspondence from Highpoint Engineering to Hopedale Planning Board dated November 30, 2021 re: 75-131 Plain Street...Supplemental Materials Submission with attached sound study prepared by Tech Environmental dated November 22, 2021.

Graves Engineering, Inc. (GEI) has been requested to review the plans and supporting materials for compliance with Section 8: Off -Street parking Area Requirements, Section 17:Ground Water Protection District and Section 18: Site Plan Review of the Zoning By-laws, Town of Hopedale, Massachusetts, Massachusetts Department of Environmental Protection (MassDEP) Stormwater Handbook, and standard engineer practices. GEI was authorized to proceed with this review on October 29, 2021. As part of this review GEI performed a reconnaissance site visit on November 9, 2021.

Our comments follow:

Zoning By-Law

1. The number of individuals present during the largest shift needs to be included on the plans to confirm compliance with the number of parking spaces requirement set in the Section 8 Table of Requirements.

2. GEI has no issues relative to compliance with Section 17.6(c)(6): Use rendering impervious more than (15) percent or two thousand five hundred (2,500) square feet of any lot. The plans propose lined forebays for pre-treatment of pavement runoff, and open infiltration basins (for pavement runoff) and subsurface infiltration systems (generally for roof runoff) for the attenuation of peak runoff rates and for the infiltration of stormwater. GEI gleaned information from the hydrology computations; the information indicates that the proposed project will result in a reduction of surface water runoff volume, hence an increase in on-site infiltration, of 2.7 acre-feet or 76% during a two-year storm event and 8.1 acre-feet or 72% during a ten-year storm event. Long-term maintenance of the stormwater systems, site maintenance and site housekeeping will be required to address stormwater quality after the construction phase of the project. Appendix D of the Stormwater Management Analysis addresses construction-phase and long-term operation and maintenance requirements. (§17.6(b)(6))
3. The site plans need to specify the datum used. (§18.3(b))
4. All traffic signs and their construction details need to be included on the site plans. (§18.3(b)(5))
5. Any proposed exterior building lighting and construction details of any proposed lighting need to be included on the site plans. (§18.3(b)(5))
6. The sizes of plants to be used in site landscaping (exclusive of the wetland replication area) need to be included on the site plans. (§18.3(b)(6))
7. The underground and overhead electric utilities, as well as the generator and transformer pads at the northeast corner of the proposed building need to be included on Sheet C500. (§18.3(b)(7))
8. The volumes of earth material to be removed needs to be included on the site plans. (§18.3(b)(9))
9. The coordinate system used needs to be included on the site plans. (§18.3(b)(11))

Hydrology & Stormwater Management Review

10. GEI Reviewed the hydrology computations and found them to be in order except as noted in the following comment.
11. The hydrology calculations for the pipe in IB-2 show that the pipe has a diameter of 15 inches, however Sheet C401 shows the pipe has a diameter of 12 inches. The information needs to be consistent.
12. The top of stone, top of pipe, and bottom of pipe elevations for UPS 3 are not consistent between the construction detail and Sheet C402. The information needs to be consistent and consistent with the hydrology computations.
13. Compliance with the MassDEP Stormwater Standards and Stormwater Handbook is reasonable provided that the following comment is addressed.
14. To prevent scour at stormwater discharge points, on Sheets C401 – C406 riprap aprons need to be added at the flared end sections and the applicable text for these flared end sections

needs to be darkened in the “Flared End Section with Riprap” construction detail on Sheet C802.

15. If the plans are revised for any other reason, then it would be helpful if the soil test pit locations were added to the grading and drainage sheets (Sheets C401 – C406).

General Engineering Comments

16. The symbol used for proposed site lighting needs to be included in the legends of Sheets C301 and C501.
17. On Sheet C304, traffic direction arrows and a stop line need to be added to the northern end of the “dedicated vehicular access” on the northwest side of the project site.
18. Relative to Sheet C306, GEI defers to the traffic engineer and/or traffic peer reviewer whether the four-way intersection within the site needs signage and pavement marking to define which approaches have the right of way.
19. Sheet C505 needs to include the symbols for SMH 1 and E-One DH272 Pump Station.
20. The existing elevations need to be labeled on Sheets C600 and C601.
21. On Sheet C602 along the proposed force main, the sewer manhole at Station 24+41.18 on the site plans states the invert elevation for the proposed force main is 296.0, however this elevation is listed as 295.0 on the road profile. The information needs to be consistent.
22. On Sheet C801, the Water, Drain and Sewer Trench construction detail needs to clarify what the 12-inch label is measuring.
23. On Sheet C802, the Typical Water – Sewer Crossing construction detail references a note, however no note was provided.
24. On Sheet C803, the construction detail for Manhole (OCS B) does not appear to apply to the project. If the construction detail is for the outlet control structure at Infiltration Basin 2, then the construction detail needs to be updated.
25. On Sheet C803, the top of berm elevation for IB 3 is listed as 238.5, however Sheet C402 shows this elevation as 238.0.
26. On Sheet C803, the top of berm elevation for IB 6 is listed as 237.9, however Sheet C404 shows this elevation as 238.7.
27. Sheet C804 includes a construction detail for bollards. The locations of the proposed bollards should be identified on the plan view sheets.
28. Signs designating whether a road is trailer or passenger vehicle accessible need to be placed throughout the project site to alert drivers of vehicle restrictions.
29. On Sheet C304, the snow storage areas at the exit from the western passenger vehicle parking lot need to be relocated to avoid blocking sight distances for vehicles exiting the parking lot.


30. On Sheet C305, the snow storage areas in the swales north of the north parking lot, to the west of the western parking lot, and along the entrance road north of Infiltration Basin 1 need to be relocated to avoid impeding stormwater flow.

General Comments

31. GEI did not receive a copy of Sheets C100 and C101.
32. The existing contour elevations need to be labeled on Sheets C401 through C406.
33. On Sheets G101 and G102 the text in the northeast corner of site parking is illegible.
34. On Sheet C203, the arrow from the label reading *100' Buffer Zone (TYP.)* needs to be adjusted to point at the 100-foot buffer zone line.
35. On Sheet C401 there is a straw wattle and limit of work label that doesn't point to any features on this plan sheet. The labels should be eliminated from this plan sheet.
36. On Sheet C402, Forebay 3B is mislabeled as Forebay 3A.
37. The matchline labels on Sheet C405 referencing Sheets C401, C403, and C405 need to be corrected.
38. Sheet C500 has a bar scale of 1" = 40', however the plans scale to 1" = 100'.
39. GEI understands the water and sewer utility providers will review their respective utilities.
40. GEI understands the Hopedale Fire Department and the water utility provider will review the proposed fire hydrant locations.
41. GEI did not review for compliance with the Wetlands Protection Act Regulations (310 CMR 10.00)

We trust this letter addresses your review requirements. Feel free to contact this office if you have any questions or comments.

Very truly yours,
Graves Engineering, Inc.



Jeffrey M. Walsh, P.E.
Principal

cc: MDM Transportation Consultants, Inc.
Douglas Hartnett, P.E. Highpoint Engineering, Inc.
Joseph Antonellis, Esq.; Mayer, Antonellis, Jachowicz & Haranas, LLP